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MASTER OF MILITARY STUDIES

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**TITLE:**

***HOW JAPAN MIGHT COUNTER  
THE ANTI-ACCESS/AREA DENIAL ENVIRONMENT  
IN THE WESTEN PACIFIC?***

SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
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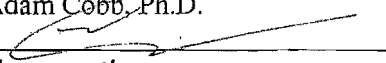
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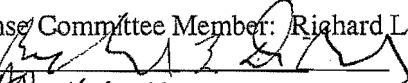
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## EXECUTIVE SUMMARY

**Title:** How Japan might counter the anti-access/area denial environment in the Western Pacific?

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**Thesis:** The emerging Anti-Access/Area-Denial (A2/AD) capabilities of China are threatening the U.S. forward military presence and power projection capabilities in the Western Pacific, which have long served as a vital factor for the peace and stability in the region. The U.S. would face a dilemma of whether to risk its forward deployed forces, or to make its commitment questioned by retreating to safe bases. Japan should enhance its defense posture particularly in the Southwestern Islands in order to increase security of the U.S. forward-deployed bases and to ensure the U.S. power projection to the Western Pacific.

**Discussion:** The U.S. military presence is essential for the peace and stability in the Western Pacific, as exemplified by the 1995-1996 Taiwan Strait Crisis. However, the U.S. military primacy is becoming increasingly contested as China rapidly develops and fields robust A2/AD capabilities, such as ballistic and cruise missiles, new attack submarines, advanced fighter aircraft and counter-space systems. As a result, the United States is facing a dilemma of whether to risk its forward-deployed forces for the political commitment, or to make its political commitment questioned by retreating the forward-deployed forces to safer bases, such as Guam or Hawaii. The retreat would be a wrong, or even dangerous message to the region, and the allies and partners in the Western Pacific would be vulnerable to aggression or, more likely, intimidation by China. Thus, the United States and Japan are required to take actions to counter A2/AD environment in the Western Pacific in order to ensure security and stability in the region. Japan is situated in an ideal location to increase security of the U.S. forward-deployed forces and to ensure the U.S. power projection to the Western Pacific by containing Chinese A2/AD capabilities within the First Island Chain - the Southwestern Islands of Japan. Historically, Japan made full use of its geographic features to contain the Soviet forces within the island chain during the Cold War. A variant of this Cold War strategy suits in face of emerging A2/AD capabilities of China. Japan should take a series of measures to establish bulwarks along the Island Chain in order to ensure the U.S. military presence in the region.

**Conclusion:** Japan should take a series of actions to establish the "Southwestern Barriers" along the arc of First Island Chain, taking advantage of its geographic features. The initiatives should include deployment of submarines, ground-based anti-air, anti-ship, anti-missile weapons and other enablers to the Southwestern Islands, where are virtually undefended today. Japan also needs to review its constitutional interpretation on the right of collective self-defense and to strengthen defense cooperation with the Philippines and other ASEAN countries in order to make the Barriers effective. These measures are essential to maintaining a stable military balance in the region and preventing China from believing that it can achieve a quick victory in the Western Pacific.

## *Introduction*

The Western Pacific Region is considerably diverse in terms of political and economic systems, ethnicity and religion, and conflicts between nation-states still remain even after the end of the Cold War. Long-standing territorial and reunification issues continue to plague the region and the regional security environment is even getting more severe. Under such circumstances, the U.S. military presence functions as a vital factor not only to maintaining the peace and security of Japan, but also the entire Western Pacific Region.

The Taiwan Strait Crisis between July 1995 and March 1996 is a perfect example of the significance of the U.S. military forces, both forward-deployed and timely reinforced forces, for the regional stability. The deployment of two U.S. carrier battle groups into the Taiwan Strait, one from the forward-deployed base at Yokosuka, Japan and the other traversed from the Arabian Gulf, diminished rising tension between China and Taiwan. Secretary of Defense William Perry boasted “while [the Chinese] are a great military power, the premier - the strongest - military power in the Western Pacific is the United States.”<sup>1</sup>

However, fifteen years has passed since the crisis and the U.S. military primacy in the Western Pacific is becoming increasingly contested. China’s defense budget has doubled every five years and China is rapidly expanding and modernizing its ballistic and cruise missile forces, cyber and space warfare capabilities, and naval and air forces. Secretary of Defense Robert Gates admits that “Beijing’s investments in cyberwarfare, antisatellite warfare, antiaircraft and antiship weaponry, submarines, and ballistic missiles could threaten the United States’ primary means to project its power and help its allies in the Pacific: bases, air and sea assets, and the networks that support them.”<sup>2</sup> In other words,

China's rapidly developing anti-access/area denial (A2/AD) capabilities are threatening the U.S. traditional methods of providing forward presence and projecting power.<sup>3</sup> If and when that is accomplished, U.S. forces will be effectively locked out of the Western Pacific and the ability of the U.S. to fulfill its commitment to defend its allies will be eroded.<sup>4</sup> As a result, the allies and partners in the Western Pacific, including Japan, will be vulnerable to aggression or, more likely, intimidation by China.<sup>5</sup> Thus, the United States and Japan are required to take actions to counter A2/AD environment in the Western Pacific in order to ensure security and stability in the region.

This paper begins with an overview of the emerging Chinese A2/AD capabilities and its implications for the operational environment in the Western Pacific. This is followed by an examination of the U.S. ongoing efforts to offset Chinese A2/AD capabilities, which is called AirSea Battle Concept. Finally, possible roles and measures of Japan, in close cooperation with the U.S., to counter A2/AD environment are discussed.

Last but not least, this paper does not intend to suggest fighting a war with China. Rather, this paper lays out possible measures to make such a war unlikely, by maintaining a stable military balance in the region and preventing China from believing that it can achieve a quick victory in the Western Pacific.

## *Chapter I*

### ***China's Anti-Access/Area-Denial Capabilities and its Implications***

Since the 1995-1996 Taiwan Strait Crisis, China has continued to develop its capabilities to deter or counter any foreign military intervention, notably by the United States, in the Taiwan issue.<sup>6</sup> China has been focusing on developing the capability to attack approaching forces at great distances in the Western Pacific, which the U.S. Department of Defense describes as “anti-access” and “area denial” capabilities.<sup>7</sup> In fact, China is developing and procuring a broad array of weapon systems such as ballistic and cruise missile systems, advanced submarines, long-range strike aircraft, air defense systems, anti-satellite systems, and cyber weapons, as described in detail below.

#### ■ **The Threats to Maritime Surface Combatants**

In August 2010, Adm. Robert Willard, the U.S. Pacific Command Commander, announced, “China is almost ready to make operational the world first anti-ship ballistic missile (ASBM).”<sup>8</sup> The Chinese ASBM, sometimes referred to as a “carrier-killer” or a “game-changer”<sup>9</sup>, reportedly has a range of at minimum 1,000 miles, which is larger than the combat radius of any U.S. carrier-based fighter aircraft, and its maneuverability will allow it to hit large-deck aircraft carriers.<sup>10</sup> The ASBM is the most worrisome threat that could cripple the operations of the U.S. carriers that are a source and symbol of the American military primacy in the region.

The submarine force is another important pillar of the Chinese A2/AD capabilities. According to the latest DOD report to the Congress, China's People's Liberation Army Navy (PLAN) presently has an inventory of 60 attack submarines.<sup>11</sup> Among them, the Russian Kilo-class is one of the most silent submarines in existence. The Kilos are



equipped with Russian homing or wire-guided torpedoes and are also able to arm anti-ship cruise missiles (ASCMs) that can be fired while submerged. The eight newer Kilo SSKs are equipped with the SS-N-27B/Sizzler supersonic ASCMs, which are specifically developed to pierce the U.S. Aegis system and defeat high-value surface ships, namely aircraft carriers.<sup>12</sup> Thus, the U.S. carrier groups are required to penetrate the Chinese multilayered barrages of ASBM, ASCM and torpedo attacks before they can launch air strikes.

The U.S. carrier groups need to risk confronting not only the threats of land-based ASBMs and submarine-launched ASCMs, but also cruise missile salvos from Chinese aviation assets as they approach China's coast.<sup>13</sup> The primary maritime strike assets are the H-6Ks, which are twin-engine strategic bombers with a combat radius of 1,600 nm. It has been reported that the H-6K can carry Kh-31A, a sea-skimming supersonic cruise missile with an attack range of over 50 nm. They can also carry Kh-31PM, an anti-radiation version of Kh-31, which is specifically designed to neutralize the U.S. radar systems. PLAN is likely to employ Su-30MKK2, a land-based long-range strike fighter, in combination with H-6K to attack U.S. fleet. The Su-30MKK2 has a combat radius of 860 nm, which is larger than any strike aircraft of the U.S. carrier air wing. Additionally, Su-30MKK2 can escort H-6Ks almost all their strike range with one aerial refueling.<sup>14</sup> Thus, the U.S. carrier groups would also confront combined fighter and bomber attacks.<sup>15</sup>

By combination of above-mentioned capabilities, the PLA seeks to attack and disable the U.S. carriers before they approach within a combat radius of carrier air wings.<sup>16</sup>

#### ■ The Threats to Forward Bases

The U.S. forward bases play an important role in maintaining a military balance in the

Western Pacific. The forward bases are also expected to function as a foundation for building up robust regional battle/logistics networks and for accepting reinforcements from the U.S. during the times of crisis or contingency.

The Chinese military doctrine defines “if an attack is aimed at disrupting the enemy air strike plans, one should target the enemy’s command-and-control systems and fuel and ammunition supply systems; if it is aimed at degrading an enemy aviation corps group to reduce the pressures from its air strikes, one should target the aircraft parked on the tarmacs of airports housing the enemy’s main bomber and fighter-bomber aviation corps.”<sup>17</sup> In order to defeat the U.S. forces, the PLA is likely to strike the first blow against the U.S. forward air and naval bases, logistical facilities, and other ground-based infrastructure in the theater.<sup>18</sup>

PLA has a large inventory of conventionally armed ballistic missiles, cruise missiles and strike aircraft to target the U.S. forward bases throughout the Western Pacific.<sup>19</sup> First, the PLA Second Artillery Corps missile units array some 1,100 short-range ballistic missiles (SRBMs) opposite Taiwan, and add average one hundred new missiles a year.<sup>20</sup> PLA is also reinforcing its medium-range ballistic missiles (MRBMs) which cover the most area out to the second island chain including Guam, with their range up to 3,000 km.<sup>21</sup> The PLA is also developing air- and ground-launched land attack cruise missiles (LACMs), such as DH-10 systems, for standoff, pinpoint strikes. The latest DOD report estimates that the PLA possesses 200-500 DH-10s, which cover most of the Japanese territory with its maximum range of 1,500+ km.<sup>22</sup>

Consequently, most U.S. forward bases in the Western Pacific, particularly those in the western part of Japan, such as air bases at Kadena and Iwakuni, and the naval base at

Sasebo, are within easy striking distance of PLA's missiles and strike aircraft, as are many Japan Self Defense Force (JSDF) bases.<sup>23</sup>

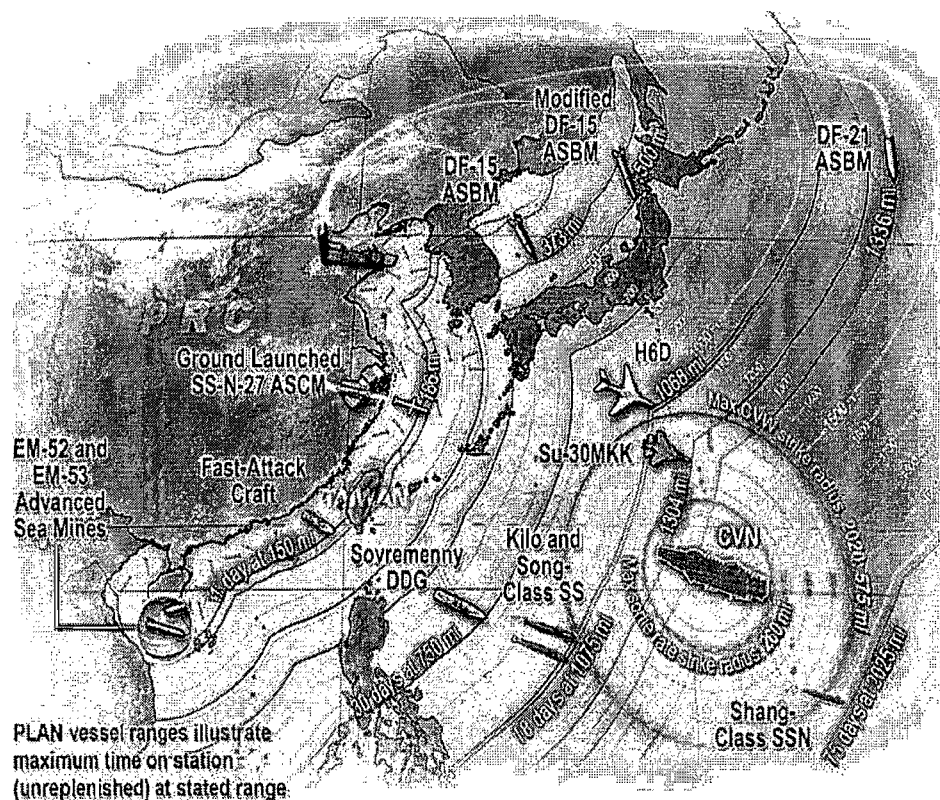


Figure 1. Chinese Anti-Access/Area-Denial (A2/AD) Capabilities  
Source: Andrew F. Krepinevich, *Why AirSea Battle?*, CSBA, 2010

## ■ Chinese Air Defenses

Further to arraying massive missile forces that cover forward U.S. airbases, PLA is pursuing other means to disable U.S. aircraft. The PLA deploys 490 combat aircraft across the strait that can be reinforced by hundreds if required, and also has advanced long-range surface to air missiles (SAMs) such as SA-10 and SA-20.<sup>24</sup> The PLA appears to seek denying U.S. air forces the airspace over Taiwan and the Strait by combining land-based interceptors and long-range air defense systems.<sup>25</sup> PRC hopes that the PLA's air defense network, coupled with its missile, air and special operation strikes against

forward air bases in the Western Pacific, would render the U.S. airpower ineffective in any regional conflict.<sup>26</sup>

### ■ Chinese Anti-Satellite and Cyber Weapons

China has demonstrated its ability to destroy low orbit satellites when it successfully conducted an anti-satellite (ASAT) missile test, destroying a defunct Chinese weather satellite with a kinetic kill vehicle in January 2007. The kinetic ASAT weapons are just one dimension of the Chinese efforts to destroy or disrupt space assets of potential adversaries.<sup>27</sup> It has been reported that Chinese ground based laser ASAT systems dazzled U.S. satellites several times probably for test purposes.<sup>28</sup> DOD estimates that China is developing a variety of technologies and concepts such as lasers, high-power microwave and particle beams for ASAT missions and assesses that a series of ASAT programs have “significant implications for A2/AD in Taiwan Strait and beyond”.<sup>29</sup>

The Chinese cyber warfare capabilities are also surrounded by secrecy. Nevertheless, it is widely believed that China has invested significantly in this area and their cyber capabilities are a “formidable concern”.<sup>30</sup> In fact, many countries including the United States have been affected by persisting cyber activities that come from China.<sup>31</sup> For example, a large-scale hacking, which was apparently originated from China, affected computer networks worldwide in 2009. PRC has denied the accusations and it is unclear if these cyber activities were government sponsored, however, development of cyber capabilities is, at least, consistent with PLA military doctrine.<sup>32</sup>

The above-mentioned capabilities of China to disrupt or destroy the U.S. network in cyber and space domain undermine foundations of U.S. power projection operations. The U.S. military operations lean heavily on space assets and computer networks. For

example, majority of precision-guided weaponry and some unmanned aerial vehicles do not function without GPS systems and satellite data links.<sup>33</sup>

#### ■ **An Illustrative PLA Attack and its Implications**

Various researchers have conducted studies illustrating postulated PLA's attack against the U.S. forces and allies in the Western Pacific. The landscape of the A2/AD operational approach is described as follows:

“Early in [the] conflict, the PLA would likely seek to deny the United States the ability to launch strikes from its bases in the region, such as Kadena Air Base on Okinawa, and (eventually) Andersen Air Base on Guam. The PLA's 2nd Artillery would launch massed salvos of ballistic missiles at these bases, followed by waves of PLAAF strike aircraft. These strikes would target aircraft on the ground as well as runways, taxiways, fuel and munitions storage facilities and maintenance facilities. Similar strikes against major U.S. surface combatants operating in the Western Pacific would be undertaken by Chinese ASBMs, ASCMs and strike aircraft. These would be supplemented by PLAN submarine torpedo attacks. At the same time, Chinese air defense SAM batteries and fighter interceptor aircraft would seek to establish air superiority over the target of its military campaign. Any forward-deployed U.S. forces surviving such an attack, or reinforcements moving into the theater of operations might also have to operate with degraded or non-functional battle networks, the result of Chinese ASAT and cyber attacks.”<sup>34</sup>

The Chinese strategy may be to inflict severe losses on the U.S. forward-deployed forces, drive them out from the Western Pacific and reveal that the United States is no longer capable of defending its allies and partners.<sup>35</sup> Analysts foresee that “once this is

accomplished, the PLA could assume the strategic defense and deny reinforcing U.S. forces access to the theater until the United States determines that it would be too costly to undo what would in effect be a *fait accompli*.<sup>36</sup> In a sense, this is a variant of the Japanese strategy in 1941–1942.<sup>37</sup>

More likely and importantly, as Sun Tzu, the Chinese military theorist, observed that “to subdue the enemy without fighting is the acme of skill”, China can achieve its strategic goals without firing a shot. Once the U.S. power projection capability and its commitment to the allies in the Western Pacific become perceived as unreliable, China can easily “Finlandize” the U.S. allies and partners such as Taiwan, Republic of Korea, and Japan, and bring them under its sway.<sup>38</sup>

## *Chapter II*

### *AirSea Battle – the U.S. Response to A2/AD Environment –*

“The agreement by the Navy and the Air Force to work together on an *Air-Sea Battle concept* is an encouraging development, which has the potential to do for America’s military deterrent power at the beginning of the 21<sup>st</sup> century what Air-Land Battle did near the end of the 20<sup>th</sup>.”<sup>39</sup>

- Secretary of Defense Robert M. Gates

#### ■ Development of the AirSea Battle Concept

The 2010 Quadrennial Defense Review Report noted “the Air Force and Navy together are developing a new joint *air-sea battle concept* for defeating adversaries across the range of military operations, including adversaries equipped with sophisticated anti-access and area denial capabilities.”<sup>40</sup> The concept of AirSea Battle was initially forged by a collaborative effort of Pacific Air Forces, the Center for Strategic and Budgetary Assessments (CSBA), and the Office of Net Assessment at the Pentagon.<sup>41</sup> According to the Air Force Magazine, the collaborators conducted a series of wargames to scope the tasks of AirSea Battle in the last three years and sent the lessons learned to the Chief of Staff of the Air Force, Gen. Norton A. Schwartz, and the Chief of Naval Operations, Adm. Gray Roughead.<sup>42</sup> The wargames allegedly positioned the U.S. forces against “a rising military competitor in the East Asian littoral with a range of disruptive capabilities, including multi-dimensional anti-access networks, offensive and defensive space control capabilities, an extensive inventory of ballistic and cruise missiles, and a modernized attack submarine fleet.”<sup>43</sup> Key findings in the wargames include necessity of dispersing

aircraft and ships well before the start of hostilities, increasing the resiliency of base infrastructure, enhancing ballistic missile defense capabilities, and strengthening long-range strike capabilities.<sup>44</sup>

In late September 2009, Gen. Schwartz and Adm. Roughead signed a memorandum of understanding to proceed on AirSea Battle.<sup>45</sup> The Navy and Air Force formed a team to draft tentative AirSea Battle doctrine,<sup>46</sup> and they are allegedly finalizing it.<sup>47</sup>

### ■ **General Ideas of the AirSea Battle Concept and their Implications for Allies**

Though the details of the AirSea Battle Concept is not disclosed, CSBA, the original collaborator of the concept, has published a series of reports on the AirSea Battle Concept that offer general ideas of the concept.

Under the evolving concept, the AirSea Battle starts with defensive stage, assuming that the United States would not initiate hostilities and China would have the initiatives at the beginning of war.<sup>48</sup> In this defensive stage, the U.S. forces must be able to withstand the initial blow and limit damage to the forces and bases.<sup>49</sup> Then, the U.S. forces will execute a “blind campaign” to find and strike PLA’s ISR systems, and a “suppression campaign” to suppress or disrupt PLA’s missile launchers and C2 networks, and thus seize the initiative.<sup>50</sup>

The offensive initiatives of the concept place special emphasis on standoff long-range penetrating strike and ISR capabilities that can be launched from outside the A2/AD zone.<sup>51</sup> As Secretary of Defense Robert Gates has repeatedly noted, “[Chinese investments in cyber and anti-satellite warfare, anti-air and anti-ship weaponry, and ballistic missiles] would degrade the effectiveness of short-range fighters and put more of



a premium on being able to strike from over the horizon – whatever form that capability might take.”<sup>52</sup> In fact, the DOD is starting a new investment on a new long-range, penetrating bomber in FY 2012 Budget request just as the evolving AirSea Battle concept demands.<sup>53</sup> These initiatives, from any perspective, are sound efforts to offset the Chinese A2/AD capabilities and to sustain a stable military balance in the Western Pacific.

On the other hand, the initial defensive stage to withstand the initial attack holds more complicated implications, especially for the allies. In terms of basing, the potential options to limit damage may include 1) pull back to outside A2/AD zone, 2) disperse across the Western Pacific, and 3) retain and harden the current bases.<sup>54</sup>

The first option, retreat to Guam or even to Hawaii, may be tactically the most desirable way to avoid damage from the PLA’s early salvo strikes. However, this option would result in a status that the U.S. forces are substantially locked out of the significant portion of the Western Pacific, which is just what the PLA wants to achieve. If this option is chosen, the credibility of the U.S. commitment would be inevitably questioned. There is a worry that a wrong message would be sent not only to the allies and partners in the Western Pacific, but also to China, just like Secretary of State Dean Acheson’s speech in 1950.

The second option is dispersal, aiming to increase the number of targets and diminish the value of defeating any particular base.<sup>55</sup> In fact, basing along an arc ranging from Alaska in the north to Australia in the south, with intermediate bases in Guam and Southeast Asia was examined during a wargame called Pacific Vision, part of a process to forge AirSea Battle concept.<sup>56</sup> Potential basing sites under examination reportedly

include Clark Air Base in the Philippines, Utapao and Krot in Thailand, and air bases in northern Australia. Cam Ranh Bay and Tan Son Nhut airport in Vietnam are intriguing possibilities.<sup>57</sup> This option will certainly present difficult political choices to those countries. Some countries may calculate that the negatives of allowing the U.S. basing would outweigh the benefits.<sup>58</sup> In addition, this option has negative impacts similar to the first option for those allies and partners geographically close to PRC, namely Taiwan, South Korea, and Japan. These allies might see themselves abandoned in the foreground of the new picket line along the arc from Alaska to Australia. In essence, this option would make the U.S. allies and partners embarrassed.

Finally, the third option is to keep and harden the current bases. The methods may include pouring additional concrete on shelters, burying facilities, and increasing rapid runway repair capacity.<sup>59</sup> While best demonstrating the U.S. commitment to the Western Pacific, this option is considerably expensive<sup>60</sup> and can only mitigate the damage. While shelters can lessen the impact of a surprise attack, they will give little protection to transient aircraft or aircraft preparing to launch.<sup>61</sup>

In summary, the United States is facing a dilemma of whether to risk the forward-deployed forces and bases for its political commitment, or to make its political commitment questioned by retreating to "safe" bases. How should Japan, as an ally, address the challenges in order to ensure the U.S. commitment to the region?

## *Chapter III*

### *Japanese Roles and Measures to Counter A2/AD Environment*

#### ■ Geographic Features of Japan

Japan is located on the geopolitically important corner that commands a gateway for continental nations to access to the ocean. Since the Japanese archipelago stretches as long as 2,000 miles from Sea of Okhotsk in the north to Taiwan and the East China Sea in the south, continental nations need to pass through Japanese territory in order to go out to the Pacific via the Sea of Japan or the East China Sea.

Historically, this geographic feature of Japan was utilized during the Cold War in order to bottle up the Soviet Pacific Fleet inside the track of the archipelago. Vladivostok, the homeport of the Soviet Pacific Fleet and the USSR's single ice-free Pacific port, is accessible only through the Soya, Tsugaru, or Tsushima Straits. During his visit to Washington in 1983, then Japanese Prime Minister Yasuhiro Nakasone, in recognition of the common destiny between the United States and Japan, stated that Japan would blockade the three strategic straits in an effort to restrict the Soviet fleet activities. Nakasone emphasized “[One of Japan’s] largest objectives is to have complete and full control of the three straits that go through the Japanese islands so that there should be no passage of Soviet submarines or other naval activities.”<sup>62</sup> Actually, Japan Maritime Self Defense Force (JMSDF) in effect contained Soviet submarines within the island chain by controlling chokepoints, while allowing the U.S. fleet to conduct offensive operations against the Soviet Pacific Fleet in enclosed seas.<sup>63</sup> A variant of this Cold War strategy may suit the needs in face of emerging China today.<sup>64</sup>

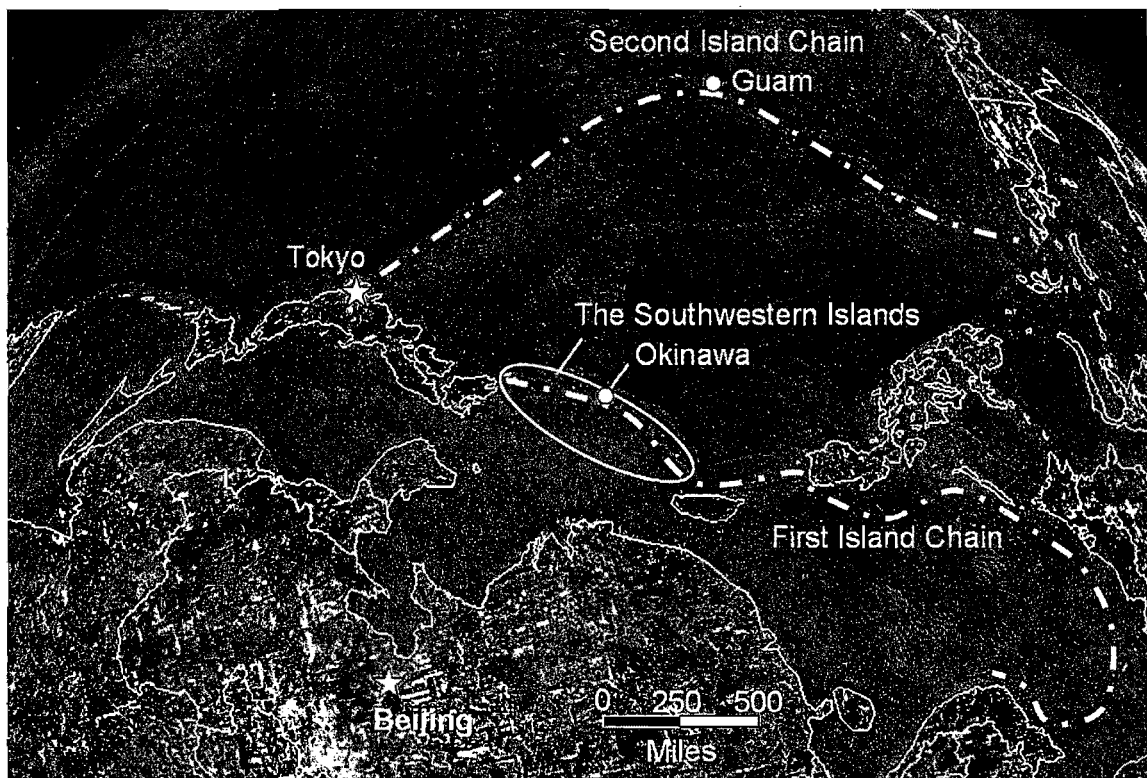


Figure 2. Geographic Features of Japan and its Southwestern Islands

### ■ Establishment of Anti-Submarine Barriers

The Southwestern Islands of Japan, part of what China calls “the First Island Chain”, constitute natural chokepoints for PLAN to advance into the Western Pacific. Japan should exploit this geographic advantage in order to counter PLA’s A2/AD capabilities. If JSDF blockades the straits that go through the Southwestern Islands, the PLAN submarines, one of the important pillars of the Chinese A2/AD capabilities, would be in effect contained within the island chain. Since the best ASW tool is another submarine,<sup>65</sup> Japan should have enough submarines and other assets to establish ASW barriers along the arc of the island chain. “Sitting on the Bottom and waiting” tactics against approaching PLA submarines would be as effective as it were against Soviet submarines

in the Cold War.<sup>66</sup> In this regard, Tokyo's recent decision to expand its submarine fleet from 16 to 22 - the first increase since 1976 - surely serves this goal.<sup>67</sup>

#### ■ Establishment of Anti-Air and Anti-Missile Barriers

The areas that Japan can utilize its geographic advantage go beyond ASW. During the Cold War, Nakasone declared, "the whole Japanese Archipelago should be like an 'unsinkable aircraft carrier', putting up a tremendous bulwark of defense against infiltration of Backfire bomber. To prevent Backfires from penetrating through this wall should be our first goal."<sup>68</sup> A variant of this strategy again suits the needs today.

Countering Chinese A2/AD strategy, it is essential to cope with the PLA's aerial threats. To strengthen air superiority fighters to protect the airspace over the Western Japan, particularly the Southwestern Islands may be one way. Actually, the Japanese government has decided to expand its fighter squadron in Okinawa.<sup>69</sup> However, strengthening fighters does not ensure air superiority. As Gates noted, "we should be concerned less with [Chinese] potential ability to challenge [us] symmetrically – fighter to fighter or ship to ship – and more with their ability to disrupt [us asymmetrically]".<sup>70</sup> The allied air forces cannot assume safety use of bases in Okinawa and the other Western Japan area due to Chinese massive missile threats.

In order to maintain air superiority over the Southwestern Islands, disposition of land-based surface to air missile (SAM) units would be an effective method. If JSDF locates a sufficient number of SAM units in the Southwestern Islands, which is a string of islands, the effective range of the SAM unit overlaps each other and a great anti-air barrier arc would be constituted in the East China Sea (see Figure 3). While surface ships and fixed sites like air bases are readily-locatable and vulnerable to missile saturation attacks, SAM

units are mobile, difficult to spot, and thus highly survivable. Japan Ground Self Defense Force (JGSDF) has already been equipped with mobile SAM systems that are capable of intercepting cruise missiles. So, the anti-air barrier arc, when densely formed, can prevent the PLA from attacking the targets beyond the First Island Chain by aircraft and cruise missiles. Japan should increase and deploy SAM units to the Southwestern Islands.

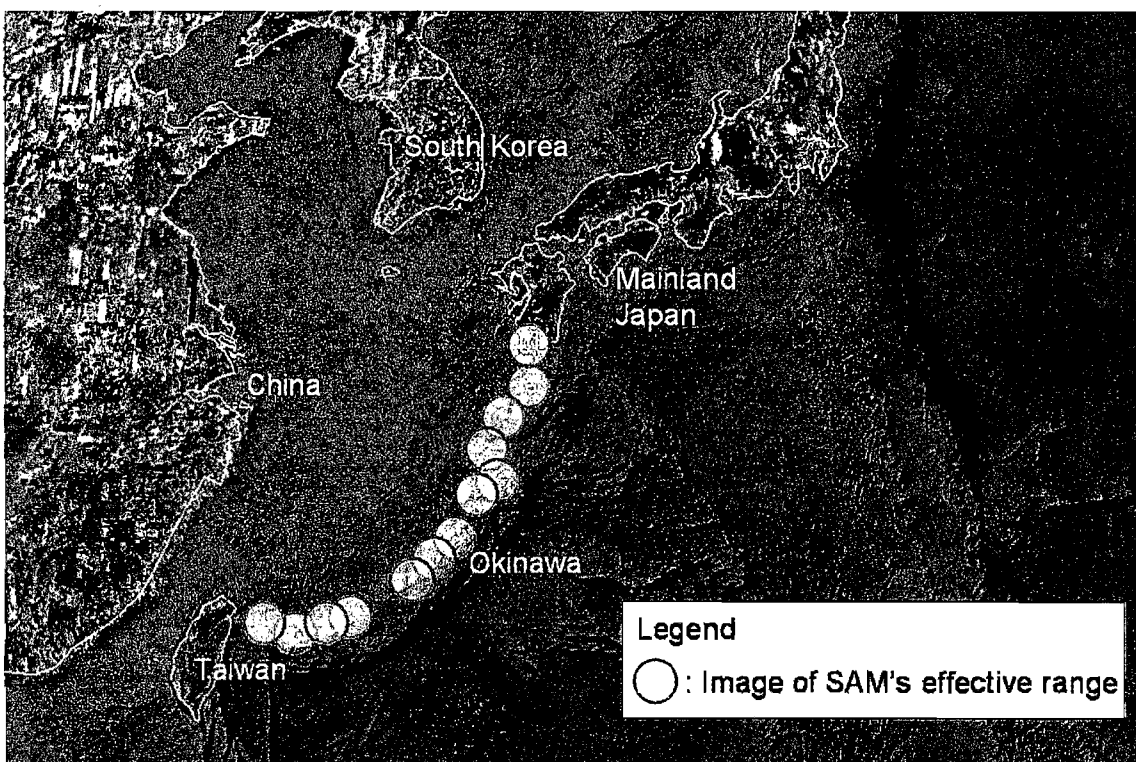


Figure 3. Notional Concept of Anti-Air Barriers along the Southwestern Islands

The current ground-based Ballistic Missile Defense system of JSDF is Patriot (PAC-3), which is a terminal phase system for point defense. Accordingly, Patriots cannot intercept ballistic missiles that overfly the Southwestern Islands to destroy targets in the Pacific such as Andersen Air Base at Guam or the U.S. aircraft carriers. In order to mitigate such ballistic missile threats, Japan should examine the introduction of land-based Standard Missile-3 (SM-3) systems, which are exoatmospheric interceptors

presently employed by JMSDF as sea-based systems. Mobile, highly concealable land-based systems would be difficult targets for PLA to locate and track. A Japan-U.S. joint development of an advanced interceptor (SM-3 Block II A) is ongoing to deal with higher trajectories, decoys and other challenges. So, the land-based SM-3 would be a good choice to beef up anti ballistic missile bulwarks along the Southwestern Islands.

#### ■ Other enablers for the Southwestern Barriers

In order for the Southwestern Barriers to function, it is essential to secure cyber and electronic domain. The U.S. and Japan need work cooperatively to enhance cyber and electronic defense capabilities.

Japan also needs to note that PLA would be likely to infiltrate Special Operations Forces (SOFs) to destroy key assets like SAMs, radar sites and C2 facilities. Thus, JSDF also needs to disposition ground troops to secure these assets. The ground forces are also essential to implement civil protection measures in close coordination with local governments.

On the contrary, the Southwestern Islands are very lightly defended by JSDF today. Particularly, there are no JGSDF units deployed in these strategically important islands other than mainland Okinawa, where some 2,100 JGSDF personnel are stationed.<sup>71</sup> The Japanese Defense Ministry cannot help officially admitting that this area is currently “a sort of ‘vacuum’ in terms of defense.”<sup>72</sup> In December 2010, the Japanese Government has decided to station “the minimum necessary units” on off-shore islands to address this problem.<sup>73</sup> This is the important first step and Japan should further enhance its defense posture in the Southwestern Islands, not in a point-defense fashion, but in a zone-defense fashion, as described earlier.

Another capability that is effectual in the defense of the Southwestern Islands may be ground-based surface to ship missile (SSM). JGSDF developed SSM, with a range of over 100 km, during the Cold War to destroy invasion forces while at sea, and has a large inventory of SSMs. The SSMs would effectively constitute anti-ship barrier, if deployed to the Southwestern Islands. Ground-based anti-submarine rocket, which has not yet been developed in any country, would also be an effective weapon to make up anti-submarine barrier together with friendly submarines.

In this way, Japan should enhance the defense posture in the Southwestern Islands and help the U.S. maintain its forward-deployed forces in the Western Pacific. In terms of public support, Japan should naturally play a major role in the defense of the Southwestern Islands, where the public opinion is generally more favorable to JSDF than to the U.S. forces as indicated by some recent local activities to attract JSDF units to this area. To ensure public support, both U.S. and Japanese governments should consider making the U.S. forces co-located with JSDF units in mainland Okinawa.

#### ■ Further Implications

The concept of the Southwestern Barriers is not just an operational concept but holds political implications. As a matter of fact, JSDF units are not allowed to shoot down ballistic missiles heading for Guam or the U.S. aircraft carriers on high seas until Japan itself is under direct attack in the current interpretation of the Constitution.<sup>74</sup> This is because the Government of Japan believes that “the exercise of the right of collective self-defense exceeds the limit on self-defense authorized under Article 9 of the Constitution and is not permissible.”<sup>75</sup> However, the U.S. forces and bases in the Western Pacific are clearly indispensable for the security of Japan. Accordingly, Japan is



required to intercept missiles heading for targets such as Guam or the U.S. aircraft carriers for its own security purposes. In addition, if Japan does not shoot down ballistic missiles heading for the United States despite being able to do so, it would rock the foundation of the Japan-US Alliance.<sup>76</sup> Such a situation must be avoided. Therefore, Japan should review its traditional interpretation of the Constitution regarding the right of collective self-defense and make such interceptions lawful.

The other political implication for Japan is the need to strengthen relationship with the Southeast Asian countries. The barriers do not work effectively if the Southeast Asian countries are vulnerable, because the PLAN assets can detour the bulwarks and intrude into the Western Pacific easily. The geographic features lend additional importance to the Association of Southeast Asian Nations (ASEAN) countries, which are Japan's traditional partners. The U.S. forces have already started to train for the defense of "islands belonging to allies and friends from Japan through Taiwan to the Philippines and Indonesia."<sup>77</sup> Japan should also strengthen its defense cooperation with ASEAN countries.

## *Summary and Conclusions*

China's rapidly developing A2/AD capabilities pose serious challenges to the U.S. military strategy in the Western Pacific, hence to the security and defense of Japan. The evolving U.S. operational concept called AirSea Battle is to address critical emerging challenges that the A2/AD environment will present. As CSBA analysts, the collaborator of the concept, emphasize, the success of AirSea Battle will depend heavily on Japan's active participation as an ally.<sup>78</sup>

Japan should recognize the serious challenges that the A2/AD environment brings and take a series of measures to establish the "Southwestern Barriers" along the arc of the First Island Chain, taking advantage of its geographic features. The initiatives should include deployment of submarines, ground-based anti-air, anti-ship, anti-ballistic/cruise missile weapons and other enablers to the Southwestern Islands, where are virtually undefended today. While the involvement of ground services in the AirSea Battle concept is still under study in the U.S.,<sup>79</sup> the ground forces of Japan (JGSDF) doubtlessly have much to contribute to the success of AirSea Battle, given the ideal dispositions of islands to prevent PLA from advancing into the Western Pacific.

Japan also needs to review its constitutional interpretation on the right of collective self-defense and to strengthen defense cooperation with other countries that comprise the First Island Chain such as the Philippines in order to make the Barriers effective.

Last but not least, China is an important partner, with which Japan is aiming to build a "mutually beneficial relationship based on common strategic interests".<sup>80</sup> This paper does never suggest a war with China. Rather, the author believes that the firm Japanese measures described in this paper would help preventing China from misunderstanding

that it might be able to achieve a quick victory in the Western Pacific, and thus contribute to the security and stability of the region for decades.

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